

Form PTO-1390 (Rev. 12-29-99)		US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NO. H 3980 PCT/US
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371			U.S. APPLICATION NO. (If filed in U.S.) 09/936188
INTERNATIONAL APPLICATION NO. PCT/EP00/01814	INTERNATIONAL FILING DATE March 2, 2000	PRIORITY DATE CLAIMED March 10, 1999	
TITLE OF INVENTION OIL BATHS			
APPLICANT(S) FOR DO/EO/US Werner Seipel, Hermann Hensen, Josef Koester, Norbert Boyxen, Celia Kosboth			
Applicant herewith submits to the United States Designated/Elected Office (EO/DO/US) the following items and other information:			
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39 (1).</p> <p>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p>a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</p> <p>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</p> <p>b. <input type="checkbox"/> have been transmitted by the International Bureau.</p> <p>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input checked="" type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). (UNEXECUTED)</p> <p>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> <p>Items 11. to 16. below concern other document(s) or information included:</p> <p>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input checked="" type="checkbox"/> A FIRST preliminary amendment</p> <p><input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>14. <input type="checkbox"/> A substitute specification.</p> <p>15. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>16. <input type="checkbox"/> Other items or information:</p>			
<p>"Express Mail Post Office to Addressee" service Mailing Label Number <u>EL541614126US</u></p>			

U.S. Application No. (If known, see 37 CFR 1.55) 09/936188		INTERNATIONAL APPLICATION NO. PCT/EP00/01814		ATTORNEY'S DOCKET NUMBER H 3980 PCT/US	
17. The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO..... \$1,000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO..... \$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$710.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4)..... \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT = \$ 860				CALCULATIONS PTO USE ONLY	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$ 0	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total Claims	20 - 20 =	0	0 X \$18.00	\$ 0	
Independent Claims	3 - 3 =	0	0 X \$80.00	\$ 0	
Multiple dependent claims (s)(if applicable)	0		+ \$270.00	\$ 0	
TOTAL OF ABOVE CALCULATIONS				=	\$ 860
Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).				\$ 0	
SUBTOTAL				=	\$ 860
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$ 0	
TOTAL NATIONAL FEE				=	\$ 860
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				+	\$ 0
TOTAL FEES ENCLOSED				=	\$ 860
				Amount to be refunded:	\$-----
				charged:	\$860.00
a. <input type="checkbox"/> A check in the amount of \$----- to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>50-1177</u> in the amount of <u>\$860.00</u> to cover the above fees. A triplicate copy of this sheet is enclosed. Order No. 01-0567. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>50-1177</u> . A triplicate copy of this sheet is enclosed. NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO:		Cognis Corporation, Law Dept. 2500 Renaissance Blvd., Suite 200 Gulph Mills, PA 19406			
		SIGNATURE: <u>Aaron R. Ettelman</u> NAME ATTORNEY FOR APPLICANT <u>42,516</u> REGISTRATION NUMBER			

"Express Mail " Mailing Label Number EL541614126US .

PATENT
Docket No. H 3980 PCT/US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RE: PCT/EP00/01814
International Filing Date: March 2, 2000
Priority Date Claimed: March 10, 1999
Applicant: Seipel, et al.
Title: OIL BATHS
Applicants' Reference: H 3980 PCT/US

PRELIMINARY AMENDMENT

Commissioner for Patents
Box PCT
Washington, DC 20231

ATTN: DO/EO/US

Prior to the calculation of fees and examination of the above-identified national stage application pursuant to the accompanying submission under 35 U.S.C. §371, please amend the English translation of the International Application submitted herewith, without prejudice, as follows:

In the Specification:

Please amend the instant Specification, without prejudice, as follows:

Please delete all text above line 8 of page 1, including the heading "Prior art", and replace the deleted matter with the following new section headings and title of the invention:

--TITLE OF THE INVENTION

Clear, Cosmetic Preparations Containing Fatty Acid (Polyglycol) Esters,
Fatty Alcohol (Polyglycol) Ethers, Polyols and/or
Alk(en)yl Oligoglycosides, and Methods of Preparing the Same

BACKGROUND OF THE INVENTION--

**Preliminary Amendment of U.S. National Stage for International Application
PCT/EP00/01814 filed March 2, 2000**

At page 1, line 22 thereof, please delete the section heading "Description of the invention" and insert the following new section heading and new paragraph:

--BRIEF SUMMARY OF THE INVENTION

The present invention relates, in general, to clear, alkanolamide- and water-free cosmetic preparations for use in skin and hair care with a defined content of a mixture of fatty acid (polyglycol) esters, fatty alcohol (polyglycol) ethers, polyols and/or alk(en)yl oligoglycosides, and one or more oil components.--

At page 2, line 12 thereof, please insert the following new section heading:

--DETAILED DESCRIPTION OF THE INVENTION--

At page 20, please delete the entire paragraph beginning on line 22 thereof and bridging pages 20 and 21; and insert the following new paragraph at page 20, line 22:

--To produce oil baths, different quantities of various oils were added to the alkanolamide-free surfactant formulation (a):

(a) 45% by weight of fatty acid (polyglycol) ester (alkanolamide-free), 45% by weight of fatty alcohol polyglycol ethers (Dehydol® LS 4 DEO-N, Henkel KGaA) and 10% by weight of polyol (propylene glycol, alkanolamide-free, Henkel KGaA). and the oil baths obtained were tested for clouding and shelf life at room temperature or 8°C (stable = +). The quantity ratios of surfactant to oil used and the results are set out in Table 1. Oil baths containing surfactant formulation (a) are distinguished by good foam properties and good refatting.--

At page 22, between lines 1 and 2, please add the following new paragraph:

--What is claimed is:--

On a separate, new page 24, following page 23, please add the following new section heading and paragraph containing an Abstract of the Disclosure:

**Preliminary Amendment of U.S. National Stage for International Application
PCT/EP00/01814 filed March 2, 2000**

--ABSTRACT OF THE DISCLOSURE

Cosmetic preparations comprising: (a) a mixture of two or more surfactants selected from the group consisting of (a1) fatty acid (polyglycol) esters, and (a2) fatty alcohol (polyglycol) ethers, and at least one component selected from the group consisting of (a3) polyols and (a4) alk(en)yl oligoglycosides; and (b) one or more oil components; wherein the mixture (a) is present in an amount of from 30 to 70% by weight, and the one or more oil components (b) is present in an amount of from 70 to 30% by weight, based upon a total weight of the mixture and the one or more oil components; are disclosed. Also disclosed are methods of preparing such cosmetic preparations.--

In the Claims:

Please add new claims 11-30, as follows:

--11. (New) A cosmetic preparation comprising:

(a) a mixture of two or more surfactants selected from the group consisting of (a1) fatty acid (polyglycol) esters, and (a2) fatty alcohol (polyglycol) ethers, and at least one component selected from the group consisting of (a3) polyols and (a4) alk(en)yl oligoglycosides, the mixture present in an amount of from 30 to 70% by weight; and

(b) one or more oil components in an amount of from 70 to 30% by weight; said percentages by weight based upon a total weight of the mixture and the one or more oil components.--

--12. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a fatty acid (polyglycol) ester and one or more components selected from the group consisting of fatty alcohol (polyglycol) ethers and alk(en)yl oligoglycosides.--

--13. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a fatty acid (polyglycol) ester and one or more components selected from the group consisting of fatty alcohol (polyglycol) ethers and polyols.--

**Preliminary Amendment of U.S. National Stage for International Application
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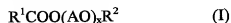
--14. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a fatty acid (polyglycol) ester and a fatty alcohol (polyglycol) ether.--

--15. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a fatty acid (polyglycol) ester, a fatty alcohol (polyglycol) ether and an alk(en)yl oligoglycoside.--

--16. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a fatty acid (polyglycol) ester, a fatty alcohol (polyglycol) ether and a polyol.--

--17. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a fatty acid (polyglycol) ester, a fatty alcohol (polyglycol) ether, a polyol and an alk(en)yl oligoglycoside.--

--18. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a fatty acid (polyglycol) ester of the general formula (I):



wherein R^1CO represents a linear or branched alk(en)yl group having from 6 to 30 carbon atoms, x represents a number of from 0 to 30; each AO independently represents a CH_2CH_2O- , $CH_2CH(CH_3)O-$ or $CH(CH_3)CH_2O$ group and R^2 represents a linear or branched alk(en)yl group having from 1 to 4 carbon atoms.--

--19. (New) The cosmetic preparation according to claim 18, wherein R^1CO represents a linear or branched alk(en)yl group having from 10 to 18 carbon atoms, x represents a number of from 10 to 15; and R^2 represents a methyl group.--

--20. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a fatty alcohol (polyglycol) ether of the general formula (II):

**Preliminary Amendment of U.S. National Stage for International Application
PCT/EP00/01814 filed March 2, 2000**



wherein R^3 represents a linear or branched alk(en)yl group having from 12 to 18 carbon atoms, and m represents a number of from 2 to 6.--

--21. (New) The cosmetic preparation according to claim 20, wherein R^3 represents a linear or branched alk(en)yl group having from 12 to 14 carbon atoms.--

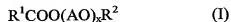
--22. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises a polyol selected from the group consisting of glycerol, alkylene glycols, technical oligoglycerol mixtures, methylol compounds, lower alkyl glucosides, sugar alcohols, sugars, amino sugars and dialcohol amines.--

--23. (New) The cosmetic preparation according to claim 11, wherein the mixture comprises an alk(en)yl oligoglycoside of the general formula (III):



wherein R^4 represents an alk(en)yl group having from 4 to 22 carbon atoms, G represents a sugar unit having 5 or 6 carbon atoms, and p represents a number of from 1 to 10.--

--24. (New) The cosmetic preparation according to claim 14, wherein the mixture comprises a fatty acid (polyglycol) ester of the general formula (I):



wherein R^1CO represents a linear or branched alk(en)yl group having from 6 to 30 carbon atoms, x represents a number of from 0 to 30; each AO independently represents a CH_2CH_2O- , $CH_2CH(CH_3)O-$ or $CH(CH_3)CH_2O$ group and R^2 represents a linear or branched alk(en)yl group having from 1 to 4 carbon atoms.--

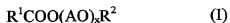
--25. (New) The cosmetic preparation according to claim 14, wherein the mixture comprises a fatty alcohol (polyglycol) ether of the general formula (II):



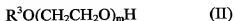
**Preliminary Amendment of U.S. National Stage for International Application
PCT/EP00/01814 filed March 2, 2000**

wherein R^3 represents a linear or branched alk(en)yl group having from 12 to 18 carbon atoms, and m represents a number of from 2 to 6.--

--26. (New) The cosmetic preparation according to claim 14, wherein the mixture comprises a fatty acid (polyglycol) ester of the general formula (I):



wherein R^1CO represents a linear or branched alk(en)yl group having from 6 to 30 carbon atoms, x represents a number of from 0 to 30; each AO independently represents a CH_2CH_2O -, $CH_2CH(CH_3)O$ - or $CH(CH_3)CH_2O$ group and R^2 represents a linear or branched alk(en)yl group having from 1 to 4 carbon atoms; and wherein the mixture comprises a fatty alcohol (polyglycol) ether of the general formula (II):



wherein R^3 represents a linear or branched alk(en)yl group having from 12 to 18 carbon atoms, and m represents a number of from 2 to 6.--

--27. (New) The cosmetic preparation according to claim 11, wherein the mixture is present in an amount of from 40 to 60% by weight, and the one or more oil components are present in an amount of from 60 to 40% by weight.--

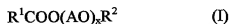
--28. (New) The cosmetic preparation according to claim 16, wherein the fatty acid (polyglycol) ester is present in an amount of about 45% by weight, the fatty alcohol (polyglycol) ether is present in an amount of about 45% by weight, and the polyol is present in an amount of about 10% by weight, said percentages by weight based upon a total weight of the mixture.--

--29. (New) A cosmetic preparation comprising:

(a) a mixture of surfactants comprising a fatty acid (polyglycol) ester, a fatty alcohol (polyglycol) ether and a polyol, the mixture present in an amount of from 40 to 60% by weight, wherein the fatty acid (polyglycol) ester corresponds to the general formula

**Preliminary Amendment of U.S. National Stage for International Application
PCT/EP00/01814 filed March 2, 2000**

(I):



wherein R^1CO represents a linear or branched alk(en)yl group having from 10 to 18 carbon atoms, x represents a number of from 5 to 20; each AO independently represents a CH_2CH_2O- , $CH_2CH(CH_3)O-$ or $CH(CH_3)CH_2O$ group and R^2 represents a methyl group, and wherein the fatty alcohol (polyglycol) ether corresponds to the general formula (II):



wherein R^3 represents a linear or branched alk(en)yl group having from 12 to 18 carbon atoms, and m represents a number of from 2 to 6; and

(b) castor oil in an amount of from 60 to 40% by weight; said percentages by weight based upon a total weight of the mixture and the castor oil.--

--30. (New) A method of preparing a clear cosmetic preparation, said method comprising:

(a) providing a mixture of two or more surfactants selected from the group consisting of (a1) fatty acid (polyglycol) esters, and (a2) fatty alcohol (polyglycol) ethers, and at least one component selected from the group consisting of (a3) polyols and (a4) alk(en)yl oligoglycosides; and

(b) combining the mixture with one or more oil components in a ratio by weight of from about 30:70 to about 70:30.--

Please cancel claims 1-10, without prejudice.

**Preliminary Amendment of U.S. National Stage for International Application
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REMARKS

Claims 11-30 are currently pending in the instant application.

The Specification has been amended to delete the original section headings and to insert the preferred section headings pursuant to 37 C.F.R. §1.77. A new Title of the Invention has been inserted. An Abstract of the Disclosure, in accordance with the disclosure, has been added. Additionally, at page 20, a paragraph has been deleted and a new paragraph inserted to replace the term "fatty alcohol (polyglycol) ester" with the correct term --fatty acid (polyglycol) ester--. It is submitted that the amendments to the Specification made herein introduce no new matter. All of the amendments to the Specification constitute deletions of original section headings and/or paragraphs, and insertions or additions of new section headings and/or paragraphs. Accordingly, pursuant to 37 C.F.R. §1.121(b)(1)(iii), no separate page captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE" is necessary. A separate page containing a clean copy of the Abstract of the Disclosure has been attached for the Examiner's convenience. Entry of the amendments to the Specification made herein are therefore proper and respectfully requested.

Original claims 1-10 have been canceled and replaced with new claims 11-30 solely for the purpose of improving clarity and grammar, which may suffer in translation, and not for any reason which relates to the statutory requirements for a patent. New claims 11-30 have not been added in response to any rejection, nor in anticipation of any rejection. Applicants respectfully submit that the scope of new claims 11-30 generally corresponds to the scope of original claims 1-10, and that new claims 11-30 are no narrower than original claims 1-10. Furthermore, although a moot point in view of their cancellation, Applicants respectfully submit that original claims 1-10 satisfied the requirements of 35 U.S.C. §112, as filed. New claims 11-30 are supported by the claims as originally filed and in the Specification, for example, at page 1, line 23, through page 2, line 4; at page 2, line 14, through page 8, line 2; and in the Examples. No new matter has been introduced. All of the amendments to the Claims constitute cancellation of original claims and the addition of new claims. Accordingly, pursuant to 37 C.F.R. §1.121(c)(1)(ii), no separate page captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE" is necessary. Entry is

**Preliminary Amendment of U.S. National Stage for International Application
PCT/EP00/01814 filed March 2, 2000**

therefore proper and respectfully requested.

Prompt examination of the instant application in view of the amendments made
herein is respectfully requested.

Respectfully submitted,

WERNER SEIPEL, et al.

September 10, 2001
(Date)

Aaron R. Ettelman
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PATENT
Docket No. H 3980 PCT/US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RE: PCT/EP00/01814
International Filing Date: March 2, 2000
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Title: OIL BATHS
Applicants' Reference: H 3980 PCT/US

PRELIMINARY AMENDMENT

Commissioner for Patents
Box PCT
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ATTN: DO/EO/US

Prior to the calculation of fees and examination of the above-identified national stage application pursuant to the accompanying submission under 35 U.S.C. §371, please amend the English translation of the International Application submitted herewith, without prejudice, as follows:

In the Specification:

Please amend the instant Specification, without prejudice, as follows:

Please delete all text above line 8 of page 1, including the heading "Prior art", and replace the deleted matter with the following new section headings and title of the invention:

--TITLE OF THE INVENTION

Clear, Cosmetic Preparations Containing Fatty Acid (Polyglycol) Esters,

Fatty Alcohol (Polyglycol) Ethers, Polyols and/or

Alk(en)yl Oligoglycosides, and Methods of Preparing the Same

BACKGROUND OF THE INVENTION--

Oil Baths

Field of the invention

This invention relates to clear, alkanolamide- and water-free cosmetic preparations for use in skin and hair care with a defined content of a mixture of fatty alcohol (polyglycol) esters, fatty alcohol polyglycol
5 ethers, polyols, alkyl and/or alkenyl oligoglycosides and oil components.

Prior art

For the production of cosmetic preparations, surfactants and oils may be mixed with one another in any ratio according to the application
10 envisaged. Hitherto, the corresponding formulations have contained alkanolamides which belong to the "nitrosamine-forming substances". Nitrosamines can have a harmful effect in any quantity, however small, not only through their presence in cosmetics, but also if they enter the body. For this reason, cosmetic preparations with no alkanolamides are
15 desirable. By contrast, the removal of alkanolamides from the surfactant mixtures leads to cloudy formulations on mixing with oil components.

Accordingly, the problem addressed by the present invention was to provide clear, water-free cosmetic preparations which would not turn cloudy, even in storage, by mixing alkanolamide-free surfactant mixtures
20 with defined quantities of oil components.

Description of the invention

The present invention relates to alkanolamide-free cosmetic preparations consisting of
25 (a) 30 to 70% by weight of a mixture of (a1) fatty acid (polyglycol) esters, (a2) fatty alcohol polyglycol ethers, (a4) alkyl and/or alkenyl oligoglycosides and/or (a3) polyols and

(b) 70 to 30% by weight of oil components,
with the proviso that the quantities add up to 100% by weight.

The present invention also relates to the use of these mixtures for the production of clear, alkanolamine-free cosmetic preparations.

5 It has surprisingly been found that clear water-free cosmetic preparations can be obtained from cloudy, alkanolamide-free surfactant mixtures consisting of fatty acid (polyglycol) esters, fatty alcohol polyglycol ethers, polyols, alkyl and/or alkenyl oligoglycosides by adding a defined quantity of oil components. These cosmetic preparations are additionally
10 distinguished by good refatting, good foam properties and stability in storage.

Fatty acid (polyglycol) esters

The preparations according to the invention may contain fatty acid
15 (polyglycol) esters - component (a1) - which correspond to formula (I):



where R^1CO is a linear or branched, saturated or unsaturated acyl group
20 containing 6 to 30, preferably 8 to 22 and more particularly 10 to 18 carbon atoms, x has an average value of 0 to 30, preferably 5 to 20 and more particularly 10 to 15 and AO is a $\text{CH}_2\text{CH}_2\text{O}-$, $\text{CH}_2\text{CH}(\text{CH}_3)\text{O}-$ and/or $\text{CH}(\text{CH}_3)\text{CH}_2\text{O}$ group and R^2 is a linear or branched, saturated or unsaturated alkyl group containing 1 to 4 and preferably 1 and/or 2 carbon
25 atoms, more particularly methyl,
and which are produced by esterification of the corresponding fatty acid (polyglycols) which, in turn, are obtainable by the relevant preparative methods of organic chemistry. To this end, ethylene oxide, propylene oxide or a mixture thereof is optionally added - in random or block
30 distribution - onto the corresponding fatty acids in the presence of an acid

as catalyst, but preferably in the presence of bases, for example sodium methylate or calcined hydrotalcite. Typical examples of suitable starting materials are the addition products of 10 to 15 moles of ethylene oxide and/or propylene oxide, but preferably the addition products of 12 moles of ethylene oxide or 12 moles of propylene oxide with caproic acid, caprylic acid, 2-ethylhexanoic acid, capric acid, lauric acid, isotridecanoic acid, myristic acid, palmitic acid, palmitoleic acid, stearic acid, isostearic acid, oleic acid, elaidic acid, petroselic acid, linoleic acid, linolenic acid, elaeostearic acid, arachic acid, gadoleic acid, behenic acid and erucic acid and technical mixtures thereof, which are then esterified. The fatty acid (polyglycol) esters may be used in the process according to the invention in quantities of 0.1 to 20% by weight, preferably in quantities of 0.5 to 10% by weight and more particularly in quantities of 1 to 5% by weight, based on the keratin-reducing substance or the oxidizing agent.

Fatty alcohol polyglycol ethers

Fatty alcohol polyglycol ethers which form component (a2) are primary aliphatic polyglycol ethers corresponding to formula (II):



in which R^3 is a linear or branched, saturated or unsaturated C_{10-18} hydrocarbon radical and m is a number of on average 2 to 6. Typical examples are products of the addition of on average 2 to 6 moles of ethylene oxide onto lauryl alcohol, isotridecyl alcohol, myristyl alcohol, cetyl alcohol, palmitoleyl alcohol, stearyl alcohol, isostearyl alcohol, oleyl alcohol, elaidyl alcohol, petroselinyl alcohol, linolyl alcohol, linolenyl alcohol and elaeostearyl alcohol and the technical mixtures thereof obtained, for example, in the high-pressure hydrogenation of technical methyl esters based on fats and oils or aldehydes from Roelen's oxosynthesis and as

monomer fraction in the dimerization of unsaturated fatty alcohols. Ethoxylates of technical C₁₂₋₁₄ fatty alcohols, for example coconut or palm kernel fatty alcohol, are preferred.

5 **Polyols**

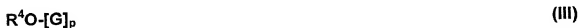
Polyols which form component (a3) preferably contain 2 to 15 carbon atoms and at least two hydroxyl groups. The polyols may contain other functional groups, more especially amino groups, or may be modified with nitrogen. Typical examples are

- 10 ➤ glycerol;
 - alkylene glycols such as, for example, ethylene glycol, diethylene glycol, propylene glycol, butylene glycol, hexylene glycol and polyethylene glycols with an average molecular weight of 100 to 1000 dalton;
 - technical oligoglycerol mixtures with a degree of self-condensation of 1.5 to 10 such as, for example, technical diglycerol mixtures with a diglycerol content of 40 to 50% by weight;
 - 15 ➤ methylol compounds such as, in particular, trimethylol ethane, trimethylol propane, trimethylol butane, pentaerythritol and dipentaerythritol;
 - 20 ➤ lower alkyl glucosides, particularly those containing 1 to 8 carbon atoms in the alkyl group, for example methyl and butyl glucoside;
 - sugar alcohols containing 5 to 12 carbon atoms, for example sorbitol or mannitol,
 - sugars containing 5 to 12 carbon atoms, for example glucose or sucrose;
 - 25 ➤ amino sugars, for example glucamine;
 - dialcoholamines, such as diethanolamine or 2-aminopropane-1,3-diol.
- Glycerol, butylene glycol, hexylene glycol, polyethylene glycols and, more particularly, propylene glycol with an average molecular weight of 100 to 30 1,000 dalton are preferably used.

The preparations according to the invention may contain components (a) in quantities of 30 to 70% by weight, preferably 40 to 60% by weight and more particularly 50% by weight. In a preferred embodiment of the invention, the preparations contain a mixture of (a1) fatty acid
5 (polyglycol) esters, preferably 45% by weight, (a2) fatty alcohol polyglycol ethers, preferably 45% by weight, and (a3) polyols, preferably 10% by weight.

Alkyl and/or alkenyl oligoglycosides

10 Alkyl and/or alkenyl oligoglycosides which form component (a4) are known nonionic surfactants which correspond to formula (III):



15 where R^4 is an alkyl and/or alkenyl group containing 4 to 22 carbon atoms, G is a sugar unit containing 5 or 6 carbon atoms and p is a number of 1 to 10. They may be obtained by the relevant methods of preparative organic chemistry. The overviews presented by Bierman et al. in **Starch/Stärke**
45, 281 (1993), by B. Salka in **Cosm. Toil.** 108, 89 (1993) and by J. Kahre
20 in **SÖFW-Journal No. 8, 598 (1995)** are cited as representative of the extensive literature available on this subject.

The alkyl and/or alkenyl oligoglycosides may be derived from aldoses or ketoses containing 5 or 6 carbon atoms, preferably glucose. Accordingly, the preferred alkyl and/or alkenyl oligoglycosides are alkyl
25 and/or alkenyl oligoglucosides. The index p in general formula (III) indicates the degree of oligomerization (DP), i.e. the distribution of mono- and oligoglycosides, and is a number of 1 to 10. Whereas p in a given compound must always be an integer and, above all, may assume a value
30 of 1 to 6, the value p for a certain alkyl oligoglycoside is an analytically determined calculated quantity which is generally a broken number. Alkyl

and/or alkenyl oligoglycosides having an average degree of oligomerization p of 1.1 to 3.0 are preferably used. Alkyl and/or alkenyl oligoglycosides having a degree of oligomerization of less than 1.7 and, more particularly, between 1.2 and 1.4 are preferred from the applicational point of view. The

5 alkyl or alkenyl radical R^4 may be derived from primary alcohols containing 4 to 11 and preferably 8 to 10 carbon atoms. Typical examples are butanol, caproic alcohol, caprylic alcohol, capric alcohol and undecyl alcohol and the technical mixtures thereof obtained, for example, in the hydrogenation of technical fatty acid methyl esters or in the hydrogenation

10 of aldehydes from Roelen's oxosynthesis. Alkyl oligoglycosides having a chain length of C_8 to C_{10} ($DP = 1$ to 3), which are obtained as first runnings in the separation of technical C_{6-18} coconut oil fatty alcohol by distillation and which may contain less than 6% by weight of C_{12} alcohol as an impurity, and also alkyl oligoglycosides based on technical $C_{9/11}$ oxoalcohols

15 ($DP = 1$ to 3) are preferred. In addition, the alkyl or alkenyl radical R^4 may also be derived from primary alcohols containing 12 to 22 and preferably 12 to 14 carbon atoms. Typical examples are lauryl alcohol, myristyl alcohol, cetyl alcohol, palmitoleyl alcohol, stearyl alcohol, isostearyl alcohol, oleyl alcohol, elaidyl alcohol, petroselinyl alcohol, arachyl alcohol, gadoleyl

20 alcohol, behenyl alcohol, erucyl alcohol, brassidyl alcohol and technical mixtures thereof which may be obtained as described above. Alkyl oligoglycosides based on hydrogenated $C_{12/14}$ coconut oil fatty alcohol having a DP of 1 to 3 are preferred.

25 Oil components

Suitable **oil components** which form component (b) are, for example, Guerbet alcohols based on fatty alcohols containing 6 to 18 and preferably 8 to 10 carbon atoms, esters of linear C_{6-22} fatty acids with linear C_{6-22} fatty alcohols, esters of branched C_{6-13} carboxylic acids with linear

30 C_{6-22} fatty alcohols, esters of linear C_{6-22} fatty acids with branched alcohols,

more particularly 2-ethyl hexanol, esters of hydroxycarboxylic acids with linear or branched C₆₋₂₂ fatty alcohols, more particularly dioctyl malate, esters of linear and/or branched fatty acids with polyhydric alcohols (for example propylene glycol, dimer diol or trimer triol) and/or Guerbet alcohols, triglycerides based on C₆₋₁₀ fatty acids, liquid mono-/di-/triglyceride mixtures based on C₆₋₁₈ fatty acids, esters of C₆₋₂₂ fatty alcohols and/or Guerbet alcohols with aromatic carboxylic acids, more particularly benzoic acid, esters of C₂₋₁₂ dicarboxylic acids with linear or branched alcohols containing 1 to 22 carbon atoms or polyols containing 2 to 10 carbon atoms and 2 to 6 hydroxyl groups, vegetable oils, branched primary alcohols, substituted cyclohexanes, linear and branched C₆₋₂₂ fatty alcohol carbonates, Guerbet carbonates, esters of benzoic acid with linear and/or branched C₆₋₂₂ alcohols (for example Finsolv® TN), linear or branched, symmetrical or nonsymmetrical dialkyl ethers containing 6 to 22 carbon atoms per alkyl group, ring opening products of epoxidized fatty acid esters with polyols, silicone oils and/or aliphatic or naphthenic hydrocarbons. The preparations according to the invention may contain the oil components, preferably castor oil, in quantities of 70 to 30, preferably 60 to 40 and more particularly 50% by weight.

Commercial applications

The cosmetic preparations according to the invention may be used for the production of clear, alkanolamine-free hair and skin care preparations. The preparations such as, for example, hair shampoos, hair lotions, foam baths, shower baths, creams, gels, lotions, alcoholic and aqueous/alcoholic solutions or emulsions, may contain mild surfactants, emulsifiers, superfatting agents, pearlizing waxes, consistency factors, thickeners, polymers, silicone compounds, fats, waxes, stabilizers, biogenic agents, deodorizing agents, anti-dandruff agents, film-formers, swelling agents, UV protection factors, antioxidants, preservatives, insect

repellents, self-tanning agents, solubilizers, perfume oils, dyes, germ inhibitors and the like as further auxiliaries and additives.

Typical examples of suitable mild, i.e. dermatologically compatible, **surfactants** are monoglyceride sulfates, mono- and/or dialkylsulfosuccinates, fatty acid isethionates, fatty acid sarcosinates, fatty acid taurides, fatty acid glutamates, ether carboxylic acids, α -olefin sulfonates, fatty acid glucamides, alkyl amidobetaines and/or protein fatty acid condensates (preferably based on wheat proteins).

Suitable **emulsifiers** are, for example, nonionic surfactants from at least one of the following groups:

- (1) products of the addition of 2 to 30 moles of ethylene oxide and/or 0 to 5 moles of propylene oxide onto fatty acids containing 12 to 22 carbon atoms and onto alkylphenols containing 8 to 15 carbon atoms in the alkyl group;
- (2) $C_{12/18}$ fatty acid monoesters and diesters of addition products of 1 to 30 moles of ethylene oxide onto glycerol;
- (3) glycerol monoesters and diesters and sorbitan monoesters and diesters of saturated and unsaturated fatty acids containing 6 to 22 carbon atoms and ethylene oxide adducts thereof;
- (4) products of the addition of 15 to 60 moles of ethylene oxide onto castor oil and/or hydrogenated castor oil;
- (5) polyol esters and, in particular, polyglycerol esters such as, for example, polyglycerol polyricinoleate, polyglycerol poly-12-hydroxystearate or polyglycerol dimerate isostearate. Mixtures of compounds from several of these classes are also suitable;
- (6) products of the addition of 2 to 15 moles of ethylene oxide onto castor oil and/or hydrogenated castor oil;
- (7) partial esters based on linear, branched, unsaturated or saturated $C_{6/22}$ fatty acids, ricinoleic acid and 12-hydroxystearic acid and glycerol, polyglycerol, pentaerythritol, dipentaerythritol, sugar

alcohols (for example sorbitol), alkyl glucosides (for example methyl glucoside, butyl glucoside, lauryl glucoside) and polyglucosides (for example cellulose);

- 5 (8) mono-, di- and trialkyl phosphates and mono-, di- and/or tri-PEG-alkyl phosphates and salts thereof;
- (9) wool wax alcohols;
- (10) polysiloxane/polyalkyl polyether copolymers and corresponding derivatives;
- 10 (11) mixed esters of pentaerythritol, fatty acids, citric acid and fatty alcohol according to **DE 11 65 574 PS** and/or mixed esters of fatty acids containing 6 to 22 carbon atoms, methyl glucose and polyols, preferably glycerol or polyglycerol;
- (12) polyalkylene glycols and
- (13) glycerol carbonate.

15

Products of the addition of ethylene oxide and/or propylene oxide onto fatty acids, alkylphenols, glycerol monoesters and diesters and sorbitan monoesters and diesters of fatty acids or onto castor oil are known commercially available products. They are homolog mixtures of which the average degree of alkoxylation corresponds to the ratio between the quantities of ethylene oxide and/or propylene oxide and substrate with which the addition reaction is carried out. $C_{12/18}$ fatty acid monoesters and diesters of adducts of ethylene oxide with glycerol are known as refatting agents for cosmetic preparations from **DE 20 24 051 PS**.

20

- 25 In addition, zwitterionic surfactants may be used as emulsifiers. Zwitterionic surfactants are surface-active compounds which contain at least one quaternary ammonium group and at least one carboxylate and one sulfonate group in the molecule. Particularly suitable zwitterionic surfactants are the so-called betaines, such as the N-alkyl-N,N-dimethyl ammonium glycinate, for example cocoalkyl dimethyl ammonium
- 30

glycinate, N-acylaminopropyl-N,N-dimethyl ammonium glycinate, for example cocoacylaminopropyl dimethyl ammonium glycinate, and 2-alkyl-3-carboxymethyl-3-hydroxyethyl imidazolines containing 8 to 18 carbon atoms in the alkyl or acyl group and cocoacylaminoethyl hydroxyethyl carboxymethyl glycinate. The fatty acid amide derivative known under the CTFA name of *Cocoamidopropyl Betaine* is particularly preferred. Ampholytic surfactants are also suitable emulsifiers. Ampholytic surfactants are surface-active compounds which, in addition to a C_{8/18} alkyl or acyl group, contain at least one free amino group and at least one -COOH- or -SO₃H- group in the molecule and which are capable of forming inner salts. Examples of suitable ampholytic surfactants are N-alkyl glycines, N-alkyl propionic acids, N-alkylaminobutyric acids, N-alkyliminodipropionic acids, N-hydroxyethyl-N-alkylamidopropyl glycines, N-alkyl taurines, N-alkyl sarcosines, 2-alkylaminopropionic acids and alkylaminoacetic acids containing around 8 to 18 carbon atoms in the alkyl group. Particularly preferred ampholytic surfactants are N-cocoalkylaminopropionate, cocoacylaminoethyl aminopropionate and C_{12/18} acyl sarcosine. Besides ampholytic emulsifiers, quaternary emulsifiers may also be used, those of the esterquat type, preferably methyl-quaternized difatty acid triethanolamine ester salts, being particularly preferred.

Superfating agents may be selected from such substances as, for example, lanolin and lecithin and also polyethoxylated or acylated lanolin and lecithin derivatives, polyol fatty acid esters, monoglycerides and fatty acid alkanolamides, the fatty acid alkanolamides also serving as foam stabilizers.

Suitable **pearlizing waxes** are, for example, alkylene glycol esters, especially ethylene glycol distearate; fatty acid alkanolamides, especially cocofatty acid diethanolamide; partial glycerides, especially stearic acid monoglyceride; esters of polybasic, optionally hydroxysubstituted carboxylic acids with fatty alcohols containing 6 to 22 carbon atoms,

especially long-chain esters of tartaric acid; fatty compounds, such as for example fatty alcohols, fatty ketones, fatty aldehydes, fatty ethers and fatty carbonates which contain in all at least 24 carbon atoms, especially laurone and distearylether; fatty acids, such as stearic acid, hydroxystearic acid or

5 behenic acid, ring opening products of olefin epoxides containing 12 to 22 carbon atoms with fatty alcohols containing 12 to 22 carbon atoms and/or polyols containing 2 to 15 carbon atoms and 2 to 10 hydroxyl groups and mixtures thereof.

The **consistency factors** mainly used are fatty alcohols or

10 hydroxyfatty alcohols containing 12 to 22 and preferably 16 to 18 carbon atoms and also partial glycerides, fatty acids or hydroxyfatty acids. A combination of these substances with alkyl oligoglucosides and/or fatty acid N-methyl glucamides of the same chain length and/or polyglycerol poly-12-hydroxystearates is preferably used. Suitable **thickeners** are, for example,

15 Aerosil types (hydrophilic silicas), polysaccharides, more especially xanthan gum, guar-guar, agar-agar, alginates and tyloses, carboxymethyl cellulose and hydroxyethyl cellulose, also relatively high molecular weight polyethylene glycol monoesters and diesters of fatty acids, polyacrylates (for example Carbopols® [Goodrich] or Synthalens® [Sigma]),

20 polyacrylamides, polyvinyl alcohol and polyvinyl pyrrolidone, surfactants such as, for example, ethoxylated fatty acid glycerides, esters of fatty acids with polyols, for example pentaerythritol or trimethylol propane, narrow-range fatty alcohol ethoxylates or alkyl oligoglucosides and electrolytes, such as sodium chloride and ammonium chloride.

25 Suitable **cationic polymers** are, for example, cationic cellulose derivatives such as, for example, the quaternized hydroxyethyl cellulose obtainable from Amerchol under the name of Polymer JR 400®, cationic starch, copolymers of diallyl ammonium salts and acrylamides, quaternized vinyl pyrrolidone/vinyl imidazole polymers such as, for example, Luviquat®

30 (BASF), condensation products of polyglycols and amines, quaternized

collagen polypeptides such as, for example, Lauryldimonium Hydroxypropyl Hydrolyzed Collagen (Lamequat® L, Grünau), quaternized wheat polypeptides, polyethyleneimine, cationic silicone polymers such as, for example, amodimethicone, copolymers of adipic acid and dimethylamino-
5 hydroxypropyl diethylenetriamine (Cartaretine®, Sandoz), copolymers of acrylic acid with dimethyl diallyl ammonium chloride (Merquat® 550, Chemviron), polyaminopolyamides as described, for example, in **FR 2 252 840 A** and crosslinked water-soluble polymers thereof, cationic chitin derivatives such as, for example, quaternized chitosan, optionally in micro-
10 crystalline distribution, condensation products of dihaloalkyls, for example dibromobutane, with bis-dialkylamines, for example bis-dimethylamino-1,3-propane, cationic guar gum such as, for example, Jaguar®CBS, Jaguar®C-17, Jaguar®C-16 of Celanese, quaternized ammonium salt polymers such as, for example, Mirapol® A-15, Mirapol® AD-1, Mirapol®
15 AZ-1 of Miranol.

Suitable **anionic, zwitterionic, amphoteric and nonionic polymers** are, for example, vinyl acetate/crotonic acid copolymers, vinyl pyrrolidone/vinyl acrylate copolymers, vinyl acetate/butyl maleate/isobornyl acrylate copolymers, methyl vinylether/maleic anhydride copolymers and
20 esters thereof, uncrosslinked and polyol-crosslinked polyacrylic acids, acrylamidopropyl trimethylammonium chloride/acrylate copolymers, octylacrylamide/methyl methacrylate/tert.-butylaminoethyl methacrylate/2-hydroxypropyl methacrylate copolymers, polyvinyl pyrrolidone, vinyl pyrrolidone/vinyl acetate copolymers, vinyl pyrrolidone/dimethylaminoethyl
25 methacrylate/vinyl caprolactam terpolymers and optionally derivatized cellulose ethers and silicones.

Suitable **silicone compounds** are, for example, dimethyl polysiloxanes, methylphenyl polysiloxanes, cyclic silicones and amino-, fatty acid-, alcohol-, polyether-, epoxy-, fluorine-, glycoside- and/or alkyl-modified
30 silicone compounds which may be both liquid and resin-like at room

temperature. In addition, a detailed review of suitable liquid silicones was published by Todd et al. in **Cosm. Toil.** 91, 27 (1976).

Typical examples of **fats** are glycerides while suitable **waxes** are inter alia beeswax, carnauba wax, candelilla wax, montan wax, paraffin wax, hydrogenated castor oils, fatty acid esters solid at room temperature or microwaxes, optionally in combination with hydrophilic waxes, for example cetyl stearyl alcohol or partial glycerides. Metal salts of fatty acids such as, for example, magnesium, aluminium and/or zinc stearate or ricinoleate may be used as **stabilizers**.

In the context of the invention, **biogenic agents** are, for example, tocopherol, tocopherol acetate, tocopherol palmitate, ascorbic acid, deoxyribonucleic acid, retinol, bisabolol, allantoin, phytantriol, panthenol, AHA acids, amino acids, ceramides, pseudoceramides, essential oils, plant extracts, and vitamin complexes.

Suitable **deodorizers** are, for example, antiperspirants, such as aluminium chlorhydrates. These antiperspirants are colorless hygroscopic crystals which readily deliquesce in air and which accumulate when aqueous aluminium chloride solutions are concentrated by evaporation. Aluminium chlorhydrate is used for the production of perspiration-inhibiting and deodorizing compositions and probably acts by partially blocking the sweat glands through the precipitation of proteins and/or polysaccharides [cf. **J. Soc. Cosm. Chem.** 24, 281 (1973)]. For example, an aluminium chlorhydrate which corresponds to the formula $[\text{Al}_2(\text{OH})_5\text{Cl}] \cdot 2.5\text{H}_2\text{O}$ and which is particularly preferred for the purposes of the invention is commercially available under the name of Locron® from Hoechst AG of Frankfurt, FRG [cf. **J. Pharm. Pharmacol.** 26, 531 (1975)]. Besides the chlorhydrates, aluminium hydroxylactates and acidic aluminium/zirconium salts may also be used. Other suitable deodorizers are esterase inhibitors, preferably trialkyl citrates, such as trimethyl citrate, tripropyl citrate, triisopropyl citrate, tributyl citrate and, in particular, triethyl citrate

(Hydagen® CAT, Henkel KGaA, Düsseldorf, FRG). Esterase inhibitors inhibit enzyme activity and thus reduce odor formation. The free acid is probably released through the cleavage of the citric acid ester, reducing the pH value of the skin to such an extent that the enzymes are inhibited.

- 5 Other esterase inhibitors are sterol sulfates or phosphates, for example lanosterol, cholesterol, campesterol, stigmaterol and sitosterol sulfate or phosphate, dicarboxylic acids and esters thereof, for example glutaric acid, glutaric acid monoethyl ester, glutaric acid diethyl ester, adipic acid, adipic acid monoethyl ester, adipic acid diethyl ester, malonic acid and malonic acid diethyl ester, hydroxycarboxylic acids and esters thereof, for example
- 10 citric acid, malic acid, tartaric acid or tartaric acid diethyl ester. Antibacterial agents which influence the germ flora and destroy or inhibit the growth of perspiration-decomposing bacteria, may also be present in stick products. Examples of such antibacterial agents are chitosan,
- 15 phenoxyethanol and chlorhexidine gluconate. 5-Chloro-2-(2,4-dichlorophenoxy)-phenol, which is marketed under the name of Irgasan® by Ciba-Geigy of Basel, Switzerland, has also proved to be particularly effective.

- Suitable **antidandruff agents** are climbazole, octopirox and zinc
- 20 pyrrithione. Standard **film formers** are, for example, chitosan, microcrystalline chitosan, quaternized chitosan, polyvinyl pyrrolidone, vinyl pyrrolidone/vinyl acetate copolymers, polymers of the acrylic acid series, quaternary cellulose derivatives, collagen, hyaluronic acid and salts thereof and similar compounds. Suitable **swelling agents** for aqueous phases are
- 25 montmorillonites, clay minerals, Pemulen and alkyl-modified Carbopol types (Goodrich). Other suitable polymers and swelling agents can be found in R. Lochhead's review in **Cosm. Toil. 108, 95 (1993)**.

- Examples of **UV protection factors** include organic substances
- 30 (light filters) which are liquid or crystalline at room temperature and which are capable of absorbing ultraviolet radiation and of releasing the energy

absorbed in the form of longer-wave radiation, for example heat. UV-B filters can be oil-soluble or water-soluble. The following are examples of oil-soluble substances:

- 5 • 3-benzylidene camphor or 3-benzylidene norcamphor and derivatives thereof, for example 3-(4-methylbenzylidene)-camphor, as described in **EP 0693471 B1**;
- 4-aminobenzoic acid derivatives, preferably 4-(dimethylamino)-benzoic acid-2-ethylhexyl ester, 4-(dimethylamino)-benzoic acid-2-octyl ester
- 10 and 4-(dimethylamino)-benzoic acid amyl ester;
- esters of cinnamic acid, preferably 4-methoxycinnamic acid-2-ethylhexyl ester, 4-methoxycinnamic acid propyl ester, 4-methoxycinnamic acid isoamyl ester, 2-cyano-3,3-phenylcinnamic acid-2-ethylhexyl ester (Octocrylene);
- 15 • esters of salicylic acid, preferably salicylic acid-2-ethylhexyl ester, salicylic acid-4-isopropylbenzyl ester, salicylic acid homomenthyl ester;
- derivatives of benzophenone, preferably 2-hydroxy-4-methoxybenzophenone, 2-hydroxy-4-methoxy-4'-methylbenzophenone, 2,2'-
- 20 dihydroxy-4-methoxybenzophenone;
- esters of benzalmalonic acid, preferably 4-methoxybenzalmalonic acid di-2-ethylhexyl ester;
- triazine derivatives such as, for example, 2,4,6-trianilino-(p-carbo-2'-ethyl-1'-hexyloxy)-1,3,5-triazine and Octyl Triazone, as described in
- 25 **EP 0 818 450 A1**;
- propane-1,3-diones such as, for example, 1-(4-tert.butylphenyl)-3-(4'-methoxyphenyl)-propane-1,3-dione;
- ketotricyclo(5.2.1)decane derivatives, as described in **EP 0 694 521 B1**.

Suitable water-soluble substances are

- 2-phenylbenzimidazole-5-sulfonic acid and alkali metal, alkaline earth metal, ammonium, alkylammonium, alkanolammonium and glucammonium salts thereof;
- sulfonic acid derivatives of benzophenones, preferably 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid and salts thereof;
- sulfonic acid derivatives of 3-benzylidene camphor such as, for example, 4-(2-oxo-3-bornylidenemethyl)-benzene sulfonic acid and 2-methyl-5-(2-oxo-3-bornylidene)-sulfonic acid and salts thereof.

Typical UV-A filters are, in particular, derivatives of benzoyl methane such as, for example 1-(4'-tert-butylphenyl)-3-(4'-methoxyphenyl)-propane-1,3-dione, 4-tert-butyl-4'-methoxydibenzoylmethane (Parsol 1789) or 1-phenyl-3-(4'-isopropylphenyl)-propane-1,3-dione. The UV-A and UV-B filters may of course also be used in the form of mixtures. Besides the soluble substances mentioned, insoluble pigments, i.e. finely dispersed metal oxides or salts, may also be used for this purpose. Examples of suitable metal oxides are, in particular, zinc oxide and titanium dioxide and also oxides of iron, zirconium, silicon, manganese, aluminium and cerium and mixtures thereof. Silicates (talcum), barium sulfate and zinc stearate may be used as salts. The oxides and salts are used in the form of the pigments for skin-care and skin-protecting emulsions and decorative cosmetics. The particles should have an average diameter of less than 100 nm, preferably from 5 to 50 nm and more preferably from 15 to 30 nm. They may be spherical in shape although ellipsoidal particles or other non-spherical particles may also be used. So-called micro- or nanopigments are preferably used in sun protection products. Micronized zinc oxide is preferably used.

Other suitable UV filters can be found in P. Finkel's review in

SÖFW-Journal 122, 543 (1996).

Besides the two above-mentioned groups of primary protection factors, secondary protection factors of the **antioxidant** type may also be used. Secondary sun protection factors of the antioxidant type interrupt the photochemical reaction chain which is initiated when UV rays penetrate into the skin. Typical examples of suitable antioxidants are amino acids (for example glycine, histidine, tyrosine, tryptophane) and derivatives thereof, imidazoles (for example urocanic acid) and derivatives thereof, peptides, such as D,L-carnosine, D-carnosine, L-carnosine and derivatives thereof (for example anserine), carotinoids, carotenes (for example α -carotene, β -carotene, lycopene) and derivatives thereof, chlorogenic acid and derivatives thereof, liponic acid and derivatives thereof (for example dihydroliponic acid), aurothioglucose, propylthiouracil and other thiols (for example thioredoxine, glutathione, cysteine, cystine, cystamine and glycosyl, N-acetyl, methyl, ethyl, propyl, amyl, butyl and lauryl, palmitoyl, oleyl, γ -linoleyl, cholesteryl and glyceryl esters thereof) and their salts, dilaurylthiodipropionate, distearylthiodipropionate, thiodipropionic acid and derivatives thereof (esters, ethers, peptides, lipids, nucleotides, nucleosides and salts) and sulfoximine compounds (for example butionine sulfoximines, homocysteine sulfoximine, butionine sulfones, penta-, hexa- and hepta-thionine sulfoximine) in very small compatible dosages (for example pmole to μ mole/kg), also (metal) chelators (for example α -hydroxyfatty acids, palmitic acid, phytic acid, lactoferrine), α -hydroxy acids (for example citric acid, lactic acid, malic acid), humic acid, bile acid, bile extracts, bilirubin, biliverdin, EDTA, EGTA and derivatives thereof, unsaturated fatty acids and derivatives thereof (for example γ -linolenic acid, linoleic acid, oleic acid), folic acid and derivatives thereof, ubiquinone and ubiquinol and derivatives thereof, vitamin C and derivatives thereof (for example ascorbyl palmitate, Mg ascorbyl phosphate, ascorbyl acetate), tocopherols and derivatives (for example vitamin E acetate), vitamin A and

derivatives (vitamin A palmitate) and coniferyl benzoate of benzoin resin, rutinic acid and derivatives thereof, α -glycosyl rutin, ferulic acid, furfurylidene glucitol, carnosine, butyl hydroxytoluene, butyl hydroxyanisole, nordihydroguaiac resin acid, nordihydroguaiaretic acid, trihydroxy-
5 butyrophенone, uric acid and derivatives thereof, mannose and derivatives thereof, Superoxid-Dismutase, zinc and derivatives thereof (for example ZnO, ZnSO₄), selenium and derivatives thereof (for example selenium methionine), stilbenes and derivatives thereof (for example stilbene oxide, trans-stilbene oxide) and derivatives of these active substances suitable for
10 the purposes of the invention (salts, esters, ethers, sugars, nucleotides, nucleosides, peptides and lipids).

Suitable **preservatives** are, for example, phenoxyethanol, formaldehyde solution, parabens, pentanediol or sorbic acid and the other classes of compounds listed in Appendix 6, Parts A and B of the
15 Kosmetikverordnung ("Cosmetics Directive"). Suitable **insect repellents** are N,N-diethyl-m-toluamide, pentane-1,2-diol or Insect Repellent 3535. A suitable **self-tanning agent** is dihydroxyacetone.

Suitable **perfume oils** are mixtures of natural and synthetic fragrances. Natural fragrances include the extracts of blossoms (lily, lavender, rose, jasmine, neroli, ylang-ylang), stems and leaves (geranium, patchouli, petitgrain), fruits (anise, coriander, caraway, juniper), fruit peel (bergamot, lemon, orange), roots (nutmeg, angelica, celery, cardamon, costus, iris, calmus), woods (pinewood, sandalwood, guaiac wood, cedarwood, rosewood), herbs and grasses (tarragon, lemon grass, sage,
20 thyme), needles and branches (spruce, fir, pine, dwarf pine), resins and balsams (galbanum, elemi, benzoin, myrrh, olibanum, opoponax). Animal raw materials, for example civet and beaver, may also be used. Typical synthetic perfume compounds are products of the ester, ether, aldehyde, ketone, alcohol and hydrocarbon type. Examples of perfume compounds
25 of the ester type are benzyl acetate, phenoxyethyl isobutyrate, p-tert.butyl

cyclohexylacetate, linalyl acetate, dimethyl benzyl carbinyl acetate, phenyl ethyl acetate, linalyl benzoate, benzyl formate, ethylmethyl phenyl glycinate, allyl cyclohexyl propionate, styrallyl propionate and benzyl salicylate. Ethers include, for example, benzyl ethyl ether while aldehydes include, for example, the linear alkanals containing 8 to 18 carbon atoms, citral, citronellal, citronellyloxyacetaldehyde, cyclamen aldehyde, hydroxycitronellal, lilial and bourgeonal. Examples of suitable ketones are the ionones, α -isomethylionone and methyl cedryl ketone. Suitable alcohols are anethol, citronellol, eugenol, isoeugenol, geraniol, linalool, phenylethyl alcohol and terpineol. The hydrocarbons mainly include the terpenes and balsams. However, it is preferred to use mixtures of different perfume compounds which, together, produce an agreeable fragrance. Other suitable perfume oils are essential oils of relatively low volatility which are mostly used as aroma components. Examples are sage oil, camomile oil, clove oil, melissa oil, mint oil, cinnamon leaf oil, lime-blossom oil, juniper berry oil, vetiver oil, olibanum oil, galbanum oil, labolanum oil and lavandin oil. The following are preferably used either individually or in the form of mixtures: bergamot oil, dihydromyrcenol, lilial, lylal, citronellol, phenylethyl alcohol, α -hexylcinnamaldehyde, geraniol, benzyl acetone, cyclamen aldehyde, linalool, Boisambrene Forte, Ambroxan, indole, hedione, sandelice, citrus oil, mandarin oil, orange oil, allylamyl glycolate, cyclovertal, lavandin oil, clary oil, β -damascone, geranium oil bourbon, cyclohexyl salicylate, Vertofix Coeur, Iso-E-Super, Fixolide NP, evernyl, iraldein gamma, phenylacetic acid, geranyl acetate, benzyl acetate, rose oxide, romillat, irotyl and floramat.

Suitable **dyes** are any of the substances suitable and approved for cosmetic purposes as listed, for example, in the publication "**Kosmetische Färbemittel**" of the **Farbstoffkommission der Deutschen Forschungsgemeinschaft**, Verlag Chemie, Weinheim, 1984, pages 81 to 106. These dyes are normally used in concentrations of 0.001 to 0.1% by

weight, based on the mixture as a whole.

Typical examples of **germ inhibitors** are preservatives which act specifically against gram-positive bacteria such as, for example, 2,4,4'-trichloro-2'-hydroxydiphenyl ether, chlorhexidine (1,6-di-(4-chlorophenyl-biguanido)-hexane) or TCC (3,4,4'-trichlorocarbaniide). Numerous perfumes and essential oils also have antimicrobial properties. Typical examples are the active substances eugenol, menthol and thymol in clove, mint and thyme oil. An interesting natural deodorant is the terpene alcohol farnesol (3,7,11-trimethyl-2,6,10-dodecatrien-1-ol) which is present in linden blossom oil and which smells of lily-of-the-valley. Glycerol monolaurate has also been successfully used as a bacteriostatic agent. The percentage content of the additional germ-inhibiting agents is normally about 0.1 to 2% by weight, based on the solids component of the preparations.

The total percentage content of auxiliaries and additives may be from 1 to 50% by weight and is preferably from 5 to 40% by weight, based on the particular composition. The preparations may be produced by standard hot or cold processes and are preferably produced by the phase inversion temperature method.

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Examples

To produce oil baths, different quantities of various oils were added to the alkanolamide-free surfactant formulation (a):

- (a) 45% by weight of fatty alcohol (polyglycol) ester (alkanolamide-free),
45% by weight of fatty alcohol polyglycol ethers (Dehydo® LS 4 DEO-N, Henkel KGaA) and 10% by weight of polyol (propylene glycol, alkanolamide-free, Henkel KGaA).

and the oil baths obtained were tested for clouding and shelf life at room temperature or 8°C (stable = +). The quantity ratios of surfactant to oil used and the results are set out in Table 1. Oil baths containing surfactant

formulation (a) are distinguished by good foam properties and good refatting.

Table 1. Oil baths (composition in % by weight)

Composition/performance	Ratio (surfactant:oil)	1 with (a)
Cetiol® A	30:70	Clear; +
Lauric acid hexyl ester	50:50	Clear; +
Cetiol® OE	30:70	Clear; +
Dioctyl ether	50:50	Clear; +
Cetiol® PGL	30:70	Clear; +
Hexyl decanol ester of Guerbet alcohol mixtures	50:50	Clear; +
Eutanol® G	30:70	Clear; +
Octyl dodecanol ester	50:50	Clear; +
Myritol® 318	30:70	Clear; +
Fatty acid triglyceride	50:50	Clear; +
Soya oil	70:30	Clear; +
Sunflower oil	50:50	Clear; +
	70:30	Clear; +
Castor oil	30:70	Clear; +
	50:50	Clear; +

CLAIMS

1. Alkanolamide-free cosmetic preparations consisting of
- (a) 30 to 70% by weight of a mixture of (a1) fatty alcohol (polyglycol) esters, (a2) fatty alcohol polyglycol ethers, (a3) polyols, (a4) alkyl and/or alkenyl oligoglycosides and
- 5 (b) 70 to 30% by weight of oil components,
- with the proviso that the quantities add up to 100% by weight.
2. Preparations as claimed in claim 1, characterized in that they contain as component (a1) fatty acid (polyglycol) esters corresponding to
- 10 formula (I):



15 where R^1CO is a linear or branched, saturated or unsaturated acyl group containing 6 to 30 carbon atoms, x has an average value of 0 to 30 and AO is a $\text{CH}_2\text{CH}_2\text{O}$ -, $\text{CH}_2\text{CH}(\text{CH}_3)\text{O}$ - and/or $\text{CH}(\text{CH}_3)\text{CH}_2\text{O}$ group and R^2 is a linear or branched, saturated or unsaturated alkyl group containing 1 to 4 carbon atoms.

3. Preparations as claimed in claims 1 and/or 2, characterized in that
- 20 they contain as component (a1) fatty acid (polyglycol) esters corresponding to formula (I), in which R^1CO is a linear or branched, saturated or unsaturated acyl group containing 10 to 18 carbon atoms, x has a value of 10 to 15 and R^2 is methyl.
4. Preparations as claimed in at least one of claims 1 to 3,
- 25 characterized in that they contain as component (a2) fatty alcohol polyglycol ethers corresponding to formula (II):



30 in which R^3 is a linear or branched, saturated or unsaturated C_{12-18}

hydrocarbon radical and m is a number of on average 2 to 6.

5. Preparations as claimed in at least one of claims 1 to 4, characterized in that they contain fatty alcohol polyglycol ethers corresponding to formula (II), in which R^3 is a linear or branched, saturated or unsaturated hydrocarbon radical containing 12 to 14 carbon atoms.

6. Preparations as claimed in at least one of claims 1 to 5, characterized in that they contain as component (a3) polyols selected from the group consisting of glycerol, alkylene glycols, technical oligoglycerol mixtures, methylol compounds, lower alkyl glucosides, sugar alcohols, sugars, amino sugars and dialcohol amines.

7. Preparations as claimed in at least one of claims 1 to 6, characterized in that they contain as component (a4) alkyl and/or alkenyl oligoglycosides corresponding to formula (III):

15 $R^4O-[G]_p$ (I)

where R^4 is an alkyl and/or alkenyl group containing 4 to 22 carbon atoms, G is a sugar unit containing 5 or 6 carbon atoms and p is a number of 1 to 10.

20 8. Preparations as claimed in at least one of claims 1 to 7, characterized in that they contain castor oil as component (b).

9. The use of the mixtures claimed in claim 1 for the production of clear, alkanolamine-free cosmetic preparations.

10. The use of the mixtures claimed in claim 1 for the production of clear, alkanolamine-free hair and skin care preparations.

25

Type a plus sign (+) inside this box ☐

0010/PTO
Rev. 6/95

U.S. Department of Commerce
Patent and Trademark Office

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION

☐ Declaration Submitted with Initial Filing OR ☒ Declaration Submitted after Initial Filing

Attorney Docket Number	H 3980 PCT/US
First Named Inventor	SEIPEL, Werner
COMPLETE IF KNOWN	
Application Number	09/936,188
Filing Date	01/02/2002
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

OIL BATHS

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 03/02/2000

as United States Application Number or PCT International

Application Number PCT/EP00/01814

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES NO
199 10 704.1	DE	03/10/1999	<input type="checkbox"/>	<input checked="" type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority sheet attached hereto.

I hereby claim the benefit under Title 35, United States Code §119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	Additional provisional application numbers are listed on a supplemental priority sheet attached hereto.
		<input type="checkbox"/>

Burden Hour Statement: This form is estimated to take 4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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DECLARATION

Page 2

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s), or §365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code §112.1 acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)
	PCT/EP00/01814	03/02/2000	

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority sheet attached hereto.

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

☐ Firm Name Customer Number or label
OR
☒ List Attorney(s) and/or agent(s) name and registration number below.

Name	Registration Number	Name	Registration Number
John E. Drach	32,891	Aaron R. Ettelman	42,516
Steven J. Trzaska	36,296	Henry E. Millson, Jr.	18,980

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Please direct all correspondence to: ☒ Customer Number **23657** OR ☒ Fill in correspondence address below

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned

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						Applicant Authority	

☒ Additional inventors are being named on supplemental sheet(s) attached hereto

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet

Name of Additional Joint Inventor, if any:

☐ A petition has been filed for this unsigned inventor

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Name of Additional Joint Inventor, if any:

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